

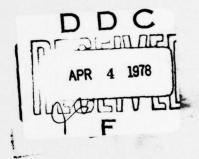
DEVELOPMENT OF A CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST

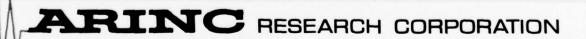


DE FILE COPY

31 MARCH 1977

Prepared for
DIRECTOR, CRUISER DESTROYER
SHIP LOGISTIC DIVISION
NAVAL SEA SYSTEMS COMMAND
WASHINGTON, D.C.
under Contract NOO024-76-C-4319

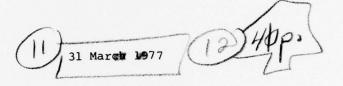




This document has been approved for public release and sale; is distribution is unlimited.



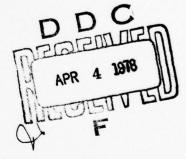
DEVELOPMENT OF A CG-16 CLASS
MAINTENANCE-CRITICAL EQUIPMENT LIST,

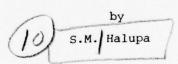


Prepared for

Director, Cruiser Destroyer Ship Logistic Division Naval Sea Systems Command Washington, D.C.

under Contract NØ0024-76-C-4319





ARINC Research Corporation
a Subsidiary of Aeronautical Radio, Inc.
2551 Riva Road
Annapolis, Maryland 21401

Publication 1646-05-9 95

This document has been approved for public release and sale; its relation is unlimited.

400 247

LB

Copyright © 1977

ARINC Research Corporation

Prepared under Contract N00024-76-C-4319 which grants to the U.S. Government a license to use any material in this publication for Government purposes.

SUMMARY

This report presents the results of an analysis performed by ARINC Research Corporation to identify Maintenance-Critical Equipments of the CG-16 Class. A Maintenance-Critical Equipment is one that has been a significant maintenance burden to the ships of the class. The objective of the study was to establish the primary areas of concentration for future engineering efforts in the Destroyer Engineered Operating Cycle (DDEOC) Program.

Information for the analysis was obtained from Forces Afloat maintenance experience reported in the Maintenance Data System (MDS), Casualty Reports (CASREPTs), and Regular Overhaul (ROH) data.

The study results identified 186 equipments of the CG-16 Class as maintenance-critical. Of this total, two equipments were highlighted as being the most significant contributors to the overall maintenance burden of the class. They are the AN/SPG-55() Radar and the Main Propulsion Boiler. These equipments were reported as requiring Forces Afloat maintenance, CASREPTs, and ROH work far in excess of other CG-16 Class equipments. The AN/SPS-48() Air Search Radar, while not a significant contributor to overhaul activity, was a major problem when measured by Forces Afloat maintenance and CASREPTs.

ARINC Research Corporation recommends that the results of the study be used to identify ship systems for in-depth analysis; further, that a preliminary review and analysis be performed to determine whether the AN/SPG-55 and AN/SPS-48() radars present problems that may require long-term development fixes. Analysis of the 1200 PSI Propulsion Boilers should be undertaken only after consultation with PMS-301, which has conducted numerous studies of these equipments.



CONTENTS

	Pag	e
SUMMARY .	ii	i
CHAPTER ON	NE: INTRODUCTION	1
CHAPTER TW	WO: APPROACH	3
2.1		3
	2.2.2 CASREPT Data	3 4 4
2.3		5
		5 7
CHAPTER TH	HREE: RESULTS	1
3.1		1
3.2	Maintenance Burden	1
3.3	Impact of Maintenance-Critical Equipments on Class Maintenance Burden	. 3
CHAPTER FO	OUR: CONCLUSIONS AND RECOMMENDATIONS	.5
APPENDIX A	A: SOURCE OF IDENTIFICATION OF CG-16 CLASS MAINTENANCE- CRITICAL EQUIPMENTS	.1
APPENDIX H	B: CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST MAINTENANCE BURDEN FACTOR (MBF) ORDER	-1
APPENDIX (C: CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST SWBS ORDER	-1
APPENDIX I	D: CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER D-	-1

CHAPTER ONE

INTRODUCTION

This report presents listings of CG-16 Class ships' equipments that have been a significant maintenance burden. The listings are based on analyses of maintenance data and are intended to be used as a guide for engineering activity conducted for this class in the Destroyer Engineered Operating Cycle (DDEOC) Program. This report has been prepared for the Naval Sea Systems Command DDEOC Program Office (NAVSEA 934X) under Contract NO0024-76-C-4319.

The goal of the DDEOC Program is to effect an early improvement in the material condition of ships, at an acceptable cost, while maintaining or increasing the ships' operational capability during an extended operating cycle. In support of this goal, a Maintenance-Critical Equipment List is developed for each ship class in the DDEOC Program. The list is based on the following information:

- Forces Afloat maintenance burdens in terms of maintenance actions, man-hours, and material cost
- · Maintenance attention during past overhauls
- · Casualty Reports (CASREPT) frequency

The CG-16 Class Maintenance-Critical Equipment List is a listing of the identified equipments for the entire ship, ranked by total experienced maintenance burden. Development of the listing did not include analysis of the reasons why equipments are significant maintenance burdens. The reasons will be investigated in subsequent DDEOC engineering studies. The Maintenance-Critical Equipment listing indicates priorities for these analyses.

Chapter Two of this report documents the approach used in the identification of the Maintenance-Critical Equipments of the CG-16 Class. Chapter Three summarizes the results; and Chapter Four presents the conclusions and recommendations. The appendixes to this report provide information on the observed maintenance burdens of the CG-16 Class Maintenance-Critical Equipments.

CHAPTER TWO

APPROACH

2.1 OVERVIEW

The analytical process used to develop the CG-16 Class Maintenance-Critical Equipments List involved two steps, (1) identification of equipments that were the most significant contributors to the Navy's maintenance burden for that class and (2) ranking of the equipments in the order of the highest maintenance burden experienced. As a basis for these steps, documented maintenance history data were compiled from several sources: Forces Afloat maintenance experience, as reported in the Maintenance Data System (MDS); CASREPT information; and data from past regular overhauls (ROH) of CG-16 Class ships were used in the analytical process.

Data analysis was conducted at the equipment/component level where Allowance Parts List (APL) numbers are assigned.

2.2 DATA COLLECTION AND COMPILATION

The starting point for the analysis was the compilation of a data base to provide information on the maintenance history for ships of the CG-16 Class. The data base consisted of four key elements: (1) MDS data, (2) CASREPT narrative summaries, (3) a summary of the Ship Alteration and Repair Packages (SARPs) of four CG-16 Class overhauls, and (4) the CG-16 Class Proposed Repair Profile.*

2.2.1 MDS Data

MDS maintenance transaction data for the period January 1970 through September 1976 were acquired in Generation IV format on computer tape from the Maintenance Support Office (MSO). The data were sorted into APL number

^{*}CG-16 Class Proposed Repair Profile, prepared by PERA (CRUDES), November 1975.

sequence after being edited for validity and screened for repair applicability (i.e., only corrective maintenance actions were considered). The resultant data, consisting of approximately 600,000 records, represented the CG-16 Class MDS data file.

2.2.2 CASREPT Data

Summaries of all CG-16 Class CASREPTs reported from January 1973 to November 1976 were received from MSO. The summaries for each individual ship in the class were reviewed and integrated into a class CASREPT data file. The file contained 1,963 separate CASREPTs.

2.2.3 ROH Data

The CG-16 Class Repair Profile identifies the repair items that are recommended for inclusion in the PERA (CRUDES) CG-16 Class Routine Repair Ship Alteration and Repair Package (SARP). The Repair Profile was developed by PERA (CRUDES) by analyzing recent SARPs and identifying repetitive repairs planned for accomplishment during overhauls of ships of the class. For the CG-16 Class Repair Profile, a repetitive repair is described as a specifically defined repair (such as an equipment Class B overhaul*) that could be identified as having occurred in at least 60 percent of the overhauls of ships in the class. The information for the CG-16 Class Repair Profile was derived from an analysis of the SARPs prepared for the ship overhauls identified in Table 1. The CG-16 Class Repair Profile was received from PERA (CRUDES) and was used in the development of the Maintenance-Critical Equipment List.

Table	1. CG-16 CLASS OVERH PREPARE THE REPAI	
Hull	Ship Name	Overhaul Start Date
CG-16	USS LEAHY	10 March 1972
CG-17	USS YARNELL	8 April 1974
CG-21	USS GRIDLEY	1 February 1973
CG-22	USS ENGLAND	8 October 1975
CG-24	USS REEVES	19 November 1973

^{*}Work that requires such overhaul as will restore the operating and performance characteristics of a system, subsystem, or component to its original design and technical specifications.

The work sheets used to prepare the CG-16 Class Repair Profile were also a part of the CG-16 Class data base. The work sheets itemized, by SWBS number, each repair action item and highlighted the repetitious repairs performed during the CG-16 Class overhauls.

2.3 DATA ANALYSIS

2.3.1 Identification of Maintenance-Critical Equipments

The identification of the Maintenance-Critical Equipments was accomplished by using Maintenance Data System (MDS) data, CASREPT data, and the CG-16 Class Proposed Repair Profile.

2.3.1.1 MDS Data Analysis

Maintenance-Critical Equipments were identified from the MDS data base using APL numbers. The APL numbers were used because they readily relate to an equipment or component. Four indicators of maintenance burden were analyzed from the MDS data:

- 1. Ship's Force parts dollars
- 2. Ship's Force man-hours
- 3. Intermediate Maintenance Activity (IMA) man-hours
- 4. Number of Ship's Force labor transactions

Ship's Force parts dollars were used for an indication of maintenance parts costs. The Ship's Force man-hours and IMA man-hours were used because they show the Forces Afloat effort required to maintain an equipment. The number of Ship's Force labor transactions was used because it provides an indication of the total number of times manpower was expended on an equipment.

These four categories represent the full range of maintenance techniques that different types of equipments require. For example, some equipments are modular in composition and their maintenance requires wholesale replacement of parts. The net result is a high parts cost and, conceivably, a relatively low manpower expenditure. Other equipments require high manpower expenditures, but little or no parts cost (e.g., a leaking valve bonnet that needs to be lapped). Some equipments can only be repaired at an IMA facility and other equipments, while not requiring large amounts of parts dollars or manpower, require maintenance attention often enough to be a burden.

In the total maintenance reported against an APL numbered equipment, if any of the four indicators of maintenance burden was significant in relation to the entire class data base, the equipment was designated Maintenance-Critical. One-tenth of one percent of the data base total for

the indicator was the Significance Threshold (e.g., \$29.5 million spent for repair parts by the class during the data period makes the Significance Threshold for parts expenditure \$29,500). If an equipment (represented by an APL number) had \$29,500 in parts cost reported against it, the equipment was included in the Maintenance-Critical Equipment List. Significance Thresholds for the CG-16 Class are shown in Table 2.

Forces Afloat Maintenance Indicator	CG-16 Class Expenditure*	Maintenance~ Critical Significance Threshold
Ship's Force Parts Dollars	\$29,504,972	\$29,505
Ship's Force Man-Hours	1,148,348	1,148
IMA Man-Hours	401,937	402
Ship's Force Labor Transactions	166,249	166

2.3.1.2 CASREPT Data

CASREPTs were used as a data source for identifying maintenance burdens because the maintenance necessary to correct a CASREPT represents that which is required by a ship to fulfill its operational commitments. Information regarding the effect of a maintenance requirement on a ship mission is not contained in the MDS. The maintenance burden equipments were identified by determining the equipments that have had a significant number of CASREPTs reported across the class. Maintenance-Critical Equipments were identified from reported CASREPTs, using APL numbers as identifiers. Four CASREPTs within the class in the data period (January 1973 through November 1976) was considered a significant amount. Any equipment identified by an APL number having four CASREPTs reported against it was selected as a Maintenance-Critical Equipment.

2.3.1.3 Overhaul Data Analysis

Maintenance-Critical Equipments were identified from the CG-16 Class Proposed Repair Profile prepared by PERA (CRUDES). If the repair of an equipment was included in the Repair Profile, the equipment was selected as a Maintenance-Critical Equipment. Repeated industrial maintenance during overhaul was considered to be an indicator of maintenance burden because it indicated equipments which require repair/refurbishment because of material condition or because it was "insurance" work necessary to support the operating period. Maintenance during ROH was used because some equipments are repaired only in the shipyard.

2.3.2 Maintenance-Critical Equipment Ranking

After the Maintenance-Critical Equipments were identified, they were ranked in accordance with the maintenance burden experienced. This was done to compare the relative maintenance burdens between equipments that may be maintained differently. For example, it is of interest to know how the maintenance burden imposed by a main feed pump compares to that of a Gun Fire Control System or a Surface Search Radar. This information is useful in the allocating and scheduling resources to analyze the effectiveness of existing maintenance practices and identifying areas of concentration for Baseline Overhaul.

The ranking of the Maintenance-Critical Equipments was accomplished by identifying the class population of each Maintenance-Critical Equipment, identifying the total equipment maintenance burdens, and ranking the Maintenance-Critical Equipments by maintenance burden.

2.3.2.1 Identification of Equipment Population

Identification of Maintenance-Critical Equipments through the MDCS and CASREPT was accomplished by determining equipment APL numbers against which significant maintenance was reported. However, identification of the APL numbers only presents problems associated with configurations.

One problem is that the same APL designator may not be universally used across the entire class because of different manufacturers of the same equipment type. To account for this, a complete set of lead APL numbers was identified for each Maintenance-Critical Equipment. This was accomplished by preparing a configuration matrix, for each Maintenance-Critical Equipment, that identified the lead APL numbers utilized within the class. For example, there could be two lead APL numbers for the main feed pumps of the CG-16 Class.

To determine the APL numbers necessary to prepare the configuration matrix, the Surface Ship Type Commander's (TYCOM) COSAL for both the Atlantic and Pacific Fleets was researched to identify similar equipments used to fulfill the same function (e.g., main feed pump). TYCOM COSAL information, as of June 1976, was used for this research.

Another problem to be considered was that, for each equipment represented by a lead APL number, there may be a subcomponent with its own APL numbers (ancillary APL numbers). Therefore, the ancillary APL numbers had to be identified. This identification was accomplished by reviewing the list for each lead APL number that represented a Maintenance-Critical Equipment and extracting the ancillary APL numbers. When this was done, a complete class population was available for each Maintenance-Critical Equipment.

2.3.2.2 Identification of Equipment Maintenance Burdens

When the complete listing of lead and ancillary APLs for each Maintenance-Critical Equipment was prepared, total maintenance burdens were determined from each of the maintenance data sources (i.e., MDS, CASREPT, and ROH).

A total equipment maintenance burden was calculated for each of the four MDS indicators (i.e., Ship's Force parts dollars, Ship's Force manhours, Ship's Force labor transactions, and IMA man-hours). To obtain for each equipment a single factor that provides an indication of the magnitude of the MDS maintenance burden imposed on the Forces Afloat, a term called the MDS Factor was computed. This term is the sum of the ratios of each of the four MDS indicators of the equipment to the total of the indicator for the class. Expressed symbolically

$$(\text{MDS})_{i} = \frac{(\text{PC})_{i}}{(\text{PC})_{T}} + \frac{(\text{SFMH})_{i}}{(\text{SFMH})_{T}} + \frac{(\text{IMAMH})_{i}}{(\text{IMAMH})_{T}} + \frac{(\text{SFLT})_{i}}{(\text{SFLT})_{T}} \times 100$$

where

(MDS); = MDS Factor for ith equipment

(PC) = Total parts costs for ith equipment

(PC) = Total parts costs for class

(SFMH); = Total Ship's Force man-hours expended for ith equipment

 $(SFMH)_{\mathrm{T}}$ = Total Ship's Force man-hours expended for class

(IMAMH) = Total Ship's IMA Force man-hours expended for i the equipment

 $(IMAMH)_{T}$ = Total Ship's IMA Force man-hours expended for class

(SFLT); = Total Ship's Force labor transactions for ith equipment

(SFLT) = Total Ship's Force labor transactions for class

To calculate the CASREPT burden, the number of CASREPTs for each identified Maintenance-Critical Equipment (reported against all lead and ancillary APLs for the CG-16 Class) was extracted from the CASREPT data file. The resultant total represented the CASREPT burden for the equipment.

ROH burdens were calculated from the work sheets used to prepare the ROH Repair Profile. These work sheets itemized all the work planned for accomplishment during four CG-16 Class ship overhauls.* The work sheets were reviewed to determine if an equipment was subjected to maintenance during each of the four ship overhauls. The percentage of times in the four overhauls the equipment received significant maintenance represented the ROH burden.

^{*}Data from only 4 of the 5 overhauls used to prepare the CG-16 Class ROH Repair Profile were included in the work sheets. USS ENGLAND (CG-22) overhaul data were not available.

2.3.2.3 Ranking of Maintenance-Critical Equipments by Maintenance Burden

After the maintenance burdens were calculated for each Maintenance-Critical Equipment, the equipments were ranked within each of the three data sources. The MDS ranking was made by descending MDS factors; the CASREPT ranking was made by descending CASREPT frequency; and the ROH frequency ranking was made by descending percentage.

The ranking was done from highest to lowest burden in each data source, and each equipment was assigned a relative standing in each category.

A final ranking was made, using the ranking in each of the three individual reported maintenance sources. The relative standings of the equipments from each of the three sources were summed. The resultant sum was the Maintenance Burden Factor for the equipment. Expressed symbolically

$$MBF_{i} = RMDS_{i} + RC_{i} + RO_{i}$$

where

 $MBF_{i} \approx Maintenance Burden Factor for ith equipment$

RMDS = Rank of ith equipment by MDS Factor

RC; = Rank of ith equipment by CASREPT frequency

RO; = Rank of ith equipment by ROH frequency

Since the equipment with the lowest Maintenance Burden Factor (MBF) represented the highest maintenance burden, the Maintenance-Critical Equipments were ranked by Maintenance Burden Factors as illustrated in Table 3.

			RANKING BY A		
Rank	Equipment	MDS Factor Rank	CASREPT Frequency Rank	ROH Frequency Rank	MBF
1	Equipment 1	1	4	2	7
2	Equipment 2	9	2	1	12
3	Equipment 3	16	1	5	22
4	Equipment 4	4	9	10	23
5	Equipment 5	15	6	12	33

CHAPTER THREE

RESULTS

3.1 CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENTS

As a result of the review and analysis of the various maintenance and maintenance-related data, 186 equipments in the CG-16 Class were identified as being maintenance-critical. Appendix A lists each of the identified critcal equipments in Ship's Work Breakdown Structure (SWBS) order. Included in this listing is a notation of the significant data source indicator or combination of indicators (i.e., MDS, CASREPT, or ROH data) that caused the equipment to be identified as maintenance critical. Further review of this listing can provide guidance for subsequent engineering analyses. (Burners and Registers [SWBS 221] were identified by the MDS data as a Maintenance-Critical Equipment because of the high expenditure of parts dollars. Any detailed analysis of the maintenance history of CG-16 Burners and Registers should look first into the causes for such expenditures.)

Twenty-three equipments in the listing were identified by all three data sources as maintenance critical, 48 were identified by two sources, and 115 were identified by a single source. The MDS was the source for identifying the majority of Maintenance-Critical Equipments. Table 4 summarizes the sources of identification of Maintenance-Critical Equipments for the CG-16 Class.

3.2 RANKING OF MAINTENANCE-CRITICAL EQUIPMENTS BY MAINTENANCE BURDEN

The results of the ranking of the CG-16 Class Maintenance-Critical Equipments are presented in Appendixes B and C. Appendix B lists the equipments in MBF rank order; Appendix C lists the equipments in SWBS order. Each listing includes:

- Equipment nomenclature
- · SWBS number
- MBF rank, as defined in Section 2.3.2.3
- · MDS Factor, as defined in Section 2.3.2.2
- · Number of reported CASREPTs against the equipment
- · Overhaul frequency, as defined in Section 2.3.2.2

Table 4. SOURCES OF CG-16 CLASS EQUIPMENT CONFIGURATION	
Data Source	Number of Maintenance-Critical Equipments Identified
MDS Only	78
CASREPT Only	23
Repair Profile Only	14
MDS and CASREPT	35
MDS and Repair Profile	10
CASREPT and Repair Profile	3
MDS, CASREPT, and Repair Profile	23
Total	186

The data in the last three columns were computed for each Maintenance-Critical Equipment identified, regardless of the source(s) that established it as a Maintenance-Critical Equipment.

The number one and number two MBF-ranked equipments stand out among all the others in this analysis. Each of these equipments met all of the MDS indicator thresholds and the CASREPT and ROH criteria. The AN/SPG-55 Radar had over twice as many CASREPTs as any other equipment and its Forces Afloat maintenance burden was significantly higher than any other equipment. Another equipment which experienced significant Forces Afloat maintenance and CASREPTs activity was the AN/SPS-48 Air Search Radar. The AN/SPS-48 Radar did not experience significant overhaul activity but was comparable in the other categories.

The method used to rank the Maintenance-Critical Equipments was developed to equally weight the three data sources (i.e., MDS data, CASREPT data, and ROH data). However, the overhaul frequency contribution to MBF can be influenced by a small sample size of overhauls. For instance, the AN/SPS-48 Air Search Radar, which ranked second by MDS data and third by CASREPT data, had an MBF rank of 16 because it was maintained in only two of the four overhauls analyzed. It would have had an MBF rank of 5 if it had been maintained in but one more overhaul.

Appendix D lists the Maintenance-Critical Equipments in Maintenance Data System (MDS) factor order. The listing indicates the comparative burden of each equipment in terms of reported Forces Afloat maintenance. The appendix was included to show how the information in Appendixes B and C can be used. The same type of listing can be prepared to analyze the CASREPT or ROH data.

3.3 IMPACT OF MAINTENANCE-CRITICAL EQUIPMENTS ON CLASS MAINTENANCE BURDEN

The CG-16 Class Maintenance-Critical Equipments identified by this analysis account for a sizable portion of the reported total maintenance burden of the class. The 186 Maintenance-Critical Equipments account for 82 percent of all the CASREPTs reported by the class, 83 percent of the Ship's Force parts dollars, 74 percent of the Ship's Force corrective maintenance man-hours, 64 percent of the IMA corrective maintenance manhours, and 64 percent of the corrective maintenance labor actions.

CHAPTER FOUR

CONCLUSIONS AND RECOMMENDATIONS

The analysis presented in this report resulted in the identification of 186 equipments of the CG-16 Class that have been significant contributors to the maintenance burden of ships of the class. These equipments have been the cause for the expenditure of a sizable portion of the Ship's Force corrective maintenance resources, as reported in the MDS. Significant contributors, insofar as Forces Afloat maintenance is concerned, are the AN/SPG-55 Radar, the Main Propulsion Boilers, and the AN/SPS-48 Radar.

This study provided the initial engineering analysis required for beginning in-depth analyses required in the DDEOC Program. Use of these results will direct analytical efforts to areas where significant advances can be realized in developing an engineering maintenance strategy for equipments that historically have been a source of maintenance problems.

The next effort in the DDEOC Development Program for the CG-16 Class is the use of these results to identify ship systems for further in-depth analysis. Because of their high maintenance burden, it is recommended that a preliminary review and analysis be conducted to identify potential problems with the AN/SPS-55 and AN/SPS-48 Radars that may require long-term development fixes. Analysis of the 1200 PSI Propulsion Boilers should be undertaken only after consultation with PMS-301, which has conducted numerous studies of these equipments.

PRECEDING PACE NOT FILLED

APPENDIX A

SOURCE OF IDENTIFICATION OF CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENTS

APPENDIX A SOURCE OF IDENTIFICATION CG-16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

SWBS	Equipment/Component Nomenclature	м	DS Indica	tor Thresh	olds	Four or	ROH Repair
SMBS	Equipment/Component Nomenciacare			dicator		CASREPTS	Profile Items
		Part \$	SF Mhrs	IMA Mhrs	Labor Txns		
221	Main Boiler	х	х	х	x	x	x
221	Burners & Registers	х					x
221	Boiler Safety Valves						x
221	Rotary Soot Blowers						x
221	ACC/FWC System					x	
231	HP/LP Turbines		х	х			
241	Main Reduction Gears		х				
243	Propulsion Shaft Seal		х	х			
244	Line Shaft Bearing Assy.		х				x
245	Propeller Assy.						х
251	Forced Draft Blower		х	х	x	x	x
253	MFP Root Steam Valves			х			
253	Main Steam 6" (1500 PSI) Gate Valves		x	х	x		
254	Auxiliary Gland Condenser			х			
254	Propulsion Gland Exhauster			х			
254	Auxiliary (SSTG) Gland Exhauster			х		х	
255	Main Feed Pump	x	x	х	x	х	x
255	Main Condensate Pump	х	x	х	x	x	x
255	Main Feed Booster Pump	x	х	х	x	x	x
255	Auxiliary Condensate Pump		x				
255	Deaerating Feed Tank			х			
255	MFP Discharge Relief Valve			х			
256	Main Circulating Pump					x	x
256	Auxiliary Circulating Pump		x	x			
258	600 PSI Bi-Metallic Steam Trap		19.00	х			
261	Port Fuel Oil Service Pump					x	
261	Fuel Oil Service Pump	x	×	x	×	x	
261	Fuel Oil Duplex Strainer			x		x	
262	Main Lube Oil Service Pump						x
262	Main Lube Oil Service Standby Pump	x	×	x	×		
264	Lube Oil Purifier	x	x		×	x	
311	Ships Service Turbine Generator		x	x	×	x	x
312	Emergency Ships Service Gas Turbine Generator	х	х	х	×	x	
314	60 KW 400 Hz. MG Set		x	x	×	x	
314	NTDS 60 KW 400 Hz. MG Set (PU-655/U)			x			
314	SPR-4 400 Hz Line Voltage Regulator	x					
314	30 KW 400 Hz MG Set		x	x	x	x	x
314	200 KW 400 Hz MG Set					x	x
342	Emergency Gas Turbine Generator Circulating Pump						x
411	AN/SPA-25() Radar PPI		×		x		×
411	AN/SPA-74() Radar Indicating Group	х	x		x	x	
411	OA-3953/SYA-4(V)() Console	x					
411	AN/UYA-4(V) Data Display Group		×				

(continued)

		APF	ENDIX A -	(continue	d)		
	Designant (Company) Name alakura	,		tor Thresh	olds	Four or	ROH Repair
SWBS	Equipment/Component Nomenclature		Inc	licator		CASREPTS	Profile Items
		Part \$	SF Mhrs	IMA Mhrs	Labor Txns		
411	OA-7979/UYA-4 PPI Console	x	x		x	x	
412	MK-19 Recorder					x	
412	CV-2517() Digital Data Converter					x	
412	CP-789/UYK Digital Computer	x					
412	AN/USQ-20(V) General Computer					x	
412	CP-642()/USQ-20(V) Digital Computer		x		x	x	
412	CV-2036/USQ-20(V) Digital Converter		x		x	x	
412	RD-243/USQ-20(V) Recorder-Reproducer		x		x	x	
415	AN/SSQ-29() Data Terminal Set	x					
415	AN/USQ-36() Data Terminal Set					x	
421	Alidade			x	x		
421	MK-3 Binoculars			x	x		
421	Chelsea Clock		x	x			
423	AN/SRN-6() TACAN	x	x		x	x	
423	AN/SRN-12() TACAN				1.4	x	
424	AN/UQN-1() Fathometer						x
426	MK-19 Gyro Compass	x	x	x	x	x	x
426	Dead Reckoning Analyzer Indicator		x			x	
426	NC-2 Plotter	×					x
426	Underwater Log Rodmeter	^				x	×
426	Underwater Log Transmitter		×	×		x	x
431	IC Switchboards (FWD & AFT)		^	^		^	×
					x		x
432	Dial Telephone Switchboard		X		^		^
432	Sound Powered Telephone Ckts.		X				
433	Intercom Loudspeakers	x			X		
434	16 mm Movie Projector			×			
437	Wind Speed & Direction Transmitter	X				x	
437	Salinity Cells		X				
441	AN/SRC-23()(V) Radio Set	x				x	
441	AM-3790()/SRC-23(V) RF Amplifier	X				x	
441	T-1004/SRC-23(V) Radio Transmitter	x					
441	AN/SRA-22 Antenna Coupler Group	x				x	
441	AN/SRC-16() Comm Central	×	X		×	x	
441	CV-1169/SRC-16 Antenna Coupler	x					
441	AN/SRC-20() Radio Set	x	x	x	x	х	
441	AN/SRC-21() Radio Set	x	x		×		
441	AN/SRC-31() Radio Set	x	x			x	x
441	AN/URC-9() Radio Set	x	x	x	x	x	1000
441	AN/URC-32() Radio Set	x	x		x	x	
441	AN/URD-4() Direction Finder Set	x	×	x		x	x
441	AN/URT-23()(V) Radio Transmitter	x				x	
441	AM-3924()/URT-23 RF Amplifier					x	
441	T-827/URT-23 Transmitter					x	
441	AN/VRC-46() Radio Set		x				
441	AN/WRC-1() Radio Set	×					
441	AN/WRR-2() Radio Receiving Set					x	
441	AN/WRT-2() Radio Transmitter	x	×		x	x	
441	R-1051()/URR Radio Receiver	×	×		×	×	

(continued)

SWBS	Equipment/Component Nomenclature	,	DS Indica	tor Thresh	olds	Four or	ROH Repair
SWDS	Equipment/component nomenclature		Inc	dicator		CASREPTS	Profile Item
		Part \$	SF Mhrs	IMA Mhrs	Labor Txns		
441	AN/URA-38() Antenna Coupler Group					x	
442	AN/UQC-1() Underwater Telephone	1 674.6				x	
445	AN/UGC-6 TTY Printer			x	x		x
445	AN/UGC-25 TTY Set		x	х	x		
445	AN/UXH-2() Facsimile Recorder Set		1				x
445	AN/UCC-1() Telegraph Terminal						x
446	TSEC/KY-8 Auto		x				
446	TSEC/KW-7				×		
446	TSEC/KG-22					х	
451	AN/SPS-10() Surface Search Radar	×	x		x	x	x
453	AN/SPS-39() 3D Air Search Radar	×	×		х		
452	AN/SPS-43() 2D Air Search Radar	×	×	х	x	x	x
453	AN/SPS-48() 3D Air Search Radar	x	x		x	x	×
455	AN/UPA-24() Decoder Set				x		
455	AN/UPX-11() Interrogator Set	x	x		×	x	
455	AN/UPX-17 Transponder		x			x	
455	AN/UPX-23 Interrogator Set					x	
455	AN/SQS-23() Sonar Set	x	x	×	×	x	
461	Transducer (AN/SQS-23 Sonar Set)						x
471	AN/ULQ-6() Countermeasures Set	x	x		×	x	x
471	AM-4530/ULQ-6() RF Amplifier	×					
472	AN/SLR-12 Countermeasures Set					x	
472	AN/WLA-3() Amplifier Group	x				x	x
472	AN/WLR-1() ECM Receiving Set	×	x		×	x	x
472	AS-899()/SLR DF Antenna					×	
473	T-MK-6 Fanfare Winch			×			x
475	Degaussing Switchboard					×	
481	MK-5 Train Parallax Corrector					×	
481	MK-1 Air Supply Unit					x	
482	MK-75 Data Converter					x	
482	MK-10 FCS Amplifier	×					
482	MK-22 FCS Amplifier Console	×					
482	MK-25 Radar Antenna Mount	×	×		x		
482	MK-1 Director Pedestal	×			x	×	
482	MK-29 Gunsight	x			×	x	
482	MK-24 TDT		×	×	×		x
482	MK-4 MOD O WDE	×	, "				
482	MK-119 Computer	x	×		×	x	
482	MK-152 Computer	,	, "			x	
482	AN/SPA-42() Electronic Synchronizer			x		^	
482	AN/SPG-50() Radar Set	x	x	,	×	×	
482	AN/SPG-55() Radar Set	×	×	x	x	x	x
482	SFTE AN/SPG-55	×	1	1	×	,	^
482	MK-53 Attack Console	x	×	×	×	×	x
491	AN/USM-116() Multimeter	^	^	^	×	_ ^	^
491	AN/USM-117() Oscilloscope			x	×		
491	AN/USM-117() Oscilloscope AN/USM-140() Oscilloscope			X X	^		

(continued)

		M		Exceeded tor Thresh	olds		
SWBS	Equipment/Component Nomenclature	-		licator		Four or More CASREPTS	ROH Repair Profile Items
		Part \$	SF Mhrs	IMA Mhrs	Labor Txns	CASREPTS	
491	AN/USM-281() Oscilloscope			x	х		
491	CBTV-545() Oscilloscope	x		x	x		
491	CBVT-1107() Signal Generator			x			
512	2 Speed Ventilation Fan		x	x			
514	A/C Condenser			x			
514	A/C Compressor	x	×	x			
514	A/C Chilled Water Pump			×			
521	Fire Pump	x	x	x	x	x	x
524	A/C Plant SW Circ Pump		x	x			
524	Refrigeration SW Circ Pump	16.14		x			
529	Bilge & FO Tank Stripping Pump			x			x
529	Main Drain Ejector			x			
531	Distiller SW Feed Pump		×	×			
531	Distilling Plant		×	×	×	x	
531	Main Overboard Brine Pump		×	x			
532	AN/SPG-55 Cooling Water Pump	×	×	x		×	×
532	Sonar Transmitter Cooler	- "	-	×			
33	Ships Service Fresh Water Pump			×			
534	Fresh Water Drain Pump		×	×		x	
34			1	×		^	
	Auxiliary Steam 3" (1500 PSI) Gate Valve						
34	600-150 PSI Steam Reducing Valve			X			
34	1200-600 PSI Steam Reducing Valve		×	X	x		
551	HP Air Dehydrator						×
551	HP Air Compressor	×	X	X	Х		х
551	LP Air Dehydrator					x	
551	LP Air Compressor	x	×	x	x		
581	Anchor						x
581	Anchor Windlass			x		Tradition of	
583	Boat Handling Winch					X	
583	Personnel Boat		X	x			
83	Utility Boat			x	1		
583	Motor Whaleboat			x	×		
661	Typewriter			x			
711	MK-33 3"/50 Twin Mount						x
711	MK-2 Loader		x	×	×	x	
711	MK-40 Amplifier	×					
721	MK-10 Terrier Launcher System	×	×	x	x	x	
721	ASROC Launcher						x
721	MK-7 Carriage (ASROC)		x	x	x	x	
721	MK-7 Guide (ASROC)	×			x		
721	ASROC Loading Crane			x	x	x	×
722	Missile Transfer Carriage		×		x		
729	AN/SPM-9 Terrier Test Set	×	1				
729	AN/SPM-17 Radar Test Set	×					
50	MK-46 Torpedo	,		×			
750	MK-44 Torpedo			×			
51							
99	MK-32 Torpedo Tube Tools-Terrier Launching System		x	X	x x		

APPENDIX B

CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST MAINTENANCE BURDEN FACTOR (MBF) ORDER

PRECEDING	PACE	NOT	FILLED
RI.ANK			

			מה הרשות ביינות היינות		
AM.	MAINTENANCE BURD	BURDEN FACTOR ORDER	IDER		
EQUIPMENT NOMENCLATURE	SWBS	RANK	FACTOR	NO. OF	PREQUENCY (
AN/SPG-551 1 RADAR SET	482	-	44.8410	230	100.00
S	221	. ~	14.8420	106	100.00
PUMP	125	3	5.7451	55	100.00
MAIN FEED PUMP	255	•	3.8002	23	100.00
SHIPS SERVICE TURBINE GENERATOR	311	s.	2.6782	22	100.00
SOUTH SEARCH RADAR	452	0,	4.4223	643	15.00
FUNCED UNAFI BLUMENS	167	- •	3 9764	17	100.00
	174	0 00	1 7007	27	75.00
RADIO	:	0	1.2704	. *2	100.00
	426	=	2.7012	12	100.00
AN/SRC-16() COMM CENTRAL	144	12	2.4921	19	15.00
AN/WLR-1() ECM RECEIVING SET	472	13	1.5303	23	75.00
MK-29 GUNSIGHT	482	41	2.1916	1	15.00
MAIN CONDENSATE PUMP	255	51	1.6670	0.5	100.00
ANYSYSTEM SU AIR SEARCH RADAR	403	9 :	16.4510		75.00
EMERGENCY SHIPS SERVICE GAS TURBINE GENERATOR	312	2 5	1.1614	12	75.00
CP-6421 1/USQ-201V) DIGITAL COMPUTER	412	19	. 8880	23	15.00
HP/LP TURBINES	182	50	1.6141	12	75.00
MK-2 LOADER	111	50	.7183	14	100.00
ANY ANY TERRIER LAUNCHER SYSTEM	121	22	6.0829	23	20.00
	261	2,5	2.5946	32	20.00
PERSONNEL BOAT	583	25	2.8233	-	75.00
ING MATER PUMP	532	56	8566.	12	75.00
AN/ULG-61) COUNTERMEASURES SET	11.5	27	2.0809	30	20.00
MK-33 3IN/50 THIN MOUNT	111	27	. 8943	13	15.00
HP AIR COMPRESSOR	166	62	1.7765	n (100-00
AN/SRN-6() TACAN	629	30	1.3481	23	20.00
	144	30	2.0731	15	20.00
MK-53 ATTACK CONSOLE	483	32	1.3169		00.67
DATA TOTAL TOTAL DESTRUCTIONS	164	33	2 7903	27	25.00
ACROC LOADING CRANE	122	35	4484	3 0	100-00
MAIN CIRCULATING PUMP	256	36	.4623		100.00
MAIN FEED BOOSTER PUMP	255	36	1.9459	6	50.00
AN/UVA-4(V) DATA DISPLAY GROUP	411	38	.8722	•	100.00
FRESH WATER DRAIN PUMP	534	39	.5825		75.00

EQUIPMENT NOMENCLATURE EQUIPMENT NOMENCLATURE NATIONER HALEBOAT NG-2 PLOTTER NG-2	D 2 0 14 11 4 81 0 12 0 0 0 0 14 11 4 81 0 12 0 0 0 0		NO. OF CASREPTS CASREPTS 20 10 11 11 13 13 13	75-00 100-00 15-00 15-00 15-00 15-00 15-00 15-00 15-00 100-00 15-00 100-00 15-00 100-00 15-00 100-00
PUMP SW85 E VALVE 264 CROUP 411 411 411 411 411 411 411 411			NO. OF CASREP 7S 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	75.00 100.00 75.00 175.00 175.00 175.00 175.00 100.00 100.00 175.00 100.00 175.00
F VALVE 5485 RAB 5426 CROUP 721 CROUP 722 CROU		ADS FACTOR 6483 -6589 -7070 -7070 -6526 -6526 -6624 -6624 -6629 -5385 -5456 -6526 -5456 -6526 -7019 -7019 -7019 -7019 -7019 -7019	AND. OF CASREPTS 5 6 10 11 12 12 13 13 13	75-00 100-00 15-00 15-00 15-00 15-00 15-00 15-00 15-00 100-00 15-00 100-00 15-00 100-00 15-00 100-00
F VALVE 583 F VALVE 682 F VALVE 682 F VALVE 683 F VAL		. 6483 . 65483 . 65483 . 9094 1.3509 2.5526 2.5526 2.5526 . 9917 . 7018 . 5385 . 6454 . 6459	26 10 12 12 12 11 13 22 22	160.00 175.00 17
PUMP 264 721 411 411 411 411 411 411 683 253 751 751 411 411 411 411 411 411 411 4		2.4783 2.4783 2.4783 2.5526 2.5526 2.5526 4.6526 4.6526 6.5344 6.538 8.538 8.538 8.538 8.538 8.554	20 10 12 12 12 11 11 13	25 25 25 25 25 25 25 25 25 25 25 25 25 2
PUMP 264 PUMP 265 6411 492 680UP 253 683 683 751 751 751 751 751 751 751 751		2.4783 .9094 1.3509 1.3509 .526 .6526 .6624 .9917 .7019 .5385 .6626 .6456	2 6 12 12 12 12 13 13 13 13	75.00 75.00 75.00 75.00 75.00 75.00 75.00
PUMP 264 PUMP 264 411 411 482 E VALVE 253 GROUP 411 751 751 751 751 751 751 751		2.4783 1.3500 6.526 2.5364 6.624 .6624 .9917 .7019 .5385 .5385 .5454	20 10 12 12 11 13 13 14 15 20 20 20 20 20 20 20 20 20 20 20 20 20	25.00 175.00 175.00 175.00 175.00 175.00
E VALVE 262 CROUP 411 682 683 683 751 751 751 751 751 751 751 75		.9094 1.3500 2.5526 2.5364 .6134 .9917 .7019 .9625 .5454 .6450	0.22 2.23 2.23 2.23 2.23 2.23 2.23 2.23	13.00 10.00 10.00 13.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00
F VALVE 411 68.00 411 68.00 411 68.01 68.01 751 411 411 411 721 721 721 721 72		1.3500 2.556 2.5364 .6134 .6624 .7019 .5385 .6454 .6450	12 3 3 1 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2	25.00 25.00 26.00 26.00 26.00 26.00 26.00 26.00
F VALVE 253 GROUP 253 GROUP 253 GROUP 253 FF 411 FF 751 FF		2.6526 2.5364 2.6134 3.6624 3.9917 3.919 5.385 6.455 6.455	12 3 3 1 1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2	75.00 25.00 100.00 50.00 50.00 75.00
F VALVE 253 GROUP 411 GROUP 411 TTER 411 TTER 531 ATOR 626 ALVE 534 T21		2.5364 .6134 .6624 .9917 .7019 .5385 .5385 .5454	12 12 13 15 15 15 15 15 15 15 15 15 15 15 15 15	25.00 100.00 50.00 75.00 75.00
E VALVE 253 GROUP 751 P		.6134 .6624 .9917 .5385 .6625 .6454	11 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	00.00 00.00 00.00 00.00 00.00 00.00
GROUP 411 411 411 411 583 255 314 721 721 721 721 731 744 744 744 744 744 744 744 74		. 6624 . 7019 . 5388 . 8625 . 6454	21 1 2 2 2 6 2	750.00 750.00 750.00 75.00
4751 4751 471 523 523 524 482 482 482 482 482 482 482 4		. 9917 . 7019 . 5385 . 6625 . 6450	11 13 2 2 2 2 2 9 9 9 9 9	100.00 50.00 75.00
P 255 314 255 314 721 721 721 721 722 724 724 724 724 721 721 721 721 721		. 6 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4 5 4	1 2 2 2 2 2	75.00
P		.5385 .8625 .5454 .6450	E 2 2 6 2	75.00
P 721 314 721 721 721 721 721 724 724 724 724 724 724 724 724 721 721 721 721		. 5454	N N O N	100.00
255 114 721 721 721 721 731 743 744 747 744 744 747 744 744		. 6450	N 0 N	100.00
721 721 721 727 729 741 740 740 744 773 744 773 774 773 774 773 774 773 774 773 774 773 774 773 774 773 774 773 774 774		.1251	. ~	20 00
7 1168 531 TTER 529 TTER 531 462 453 454 4708 ALVE 534 424 424 424 424 426 534 426 534 426 534 426 534 633 633 633 633 633 633 633 6		1671.	7	00.05
ATOR 534 ATOR 534		2 0751	1 0	15.00
ATOR 424 455 455 455 470R 426 413 41VE 534 41VE 535 534 41VE 535 535 655		4252		75.00
531 482 482 483 482 482 524 473 473 470 470 470 470 470 470 471 471 471 471 471 471 471 471 471 471		9109	23	25.00
TOR SET 482 482 5ER 455 5ER 243 673 673 673 7 1NDICATOR 626 7 426 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		.7723	}-	75-00
SER 254 SER 254 SER 524 473 R INDICATOR 626 VCING VALVE 534 7 721 721 721		1.1632	• 0	75.00
243 254 254 254 473 4 INDICATOR 534 426 7 721 721 721 721		.7399	12	25.00
SER 254 S24 S24 S24 S24 VINDICATOR 426 V 244 V 244 V 253		.4635	3	75.00
8 INDICATOR 473 473 473 473 473 473 474 7 121 721 721 721		.4937	7	15.00
INDICATOR 473 ING VALVE 534 244 424 424 721 721 721 721		1.1284	7	20.00
INDICATOR 426 ING VALVE 534 724 721 721 721 721		.3521	2	100.00
ING VALVE 234 244 424 314 721 253		.7313	80	25.00
244 424 314 721 721 553		.4543	2	15.00
METER SET 314 1721 LVES 253		.3718		75.00
314 721 LVES 253		.3197	2	100.00
121 721 253 551		.2236	•	15.00
LVES 253		.3910	-	100.00
		.2882	2	100.00
166		1.1550		20.00
5 SET	The second second second	.4415		20.00
515	92	1.0094	•	25.00
774		0266	0 m	20.00
		64170	n •	00.67

	CG 16 CLASS MAINTENANCE CRITICAL	RITICAL EQUIP	EQUIPMENT LIST		
	MAINTENANCE BURD	BURDEN FACTOR ORDER	ER		
FOLIDARNI MOMENCI ATURE	9	MBF	MDS	NO. OF	DVERHAUL
	2			21.13	
CP-789/UYK DIGITAL COMPUTER	412	81	.4380	-	75.00
INTERCOM LOUDSPEAKERS	433	85	.5062	0	15.00
AUXILIARY (SSTG) GLAND CONDENSER	254	83	.4220	12	25.00
AN/UGC-6() TTY PRINTER	445	83	.4935	0	15.00
MK-25 FCS RADAR ANTENNA MOUNT	482	85	.4886	m	50.00
BOAT HANDLING WINCH	583	986	.1257	7	15.00
DIAL TELEPHONE SWITCHBOARD	432	87	.5387	2	50.00
CV-2036/USQ-20(V) DIGITAL CONVERTER	412	88	.5782	=	00.
UNDERWATER LOG TRANSMITTER	426	68	.3752	•	20.00
AUXILIARY STEAM 3IN (1500 PSI) GATE VALVE	534	06	.3322	-	15.00
MK-3 BINOCULARS	421	16	.7711	0	50.00
UNDERWATER LOG ROOMETER	426	92	.2063	80	20.00
AN/SRC-211) RADIO SET	441	9.5	. 5548	-	20.00
HP AIR DEHYDRATOR	551	92	.1487	2	100.00
AN/UGC-25() TTY SET	445	56	.7243	0	20.00
600-150 PSI STEAM REDUCING VALVE	534	96	.3598	0	15.00
LP AIR DEHYDRATOR	551	96	.1930	80	20.00
AN/SRC-23()(V) RADIO SET	441	9.6	.4772	80	00.
DEGAUSSING SHITCHBOARD	475	66	9660.	•	15.00
MAIN LUBE OIL SERVICE PUMP	262	100	.1739	2	15.00
A/C CHILLED WATER PUMP	514	101	.5356	9	25.00
MISSLE TRANSFER CARRIAGE	722	101	.2985	3	20.00
AN/SPM-9 TERRIER TEST SET	129	101	.2222	1	15.00
DEAERATING FEED TANK	255	104	.4511	-	20.00
MK-1 DIRECTOR PEDESTAL	482	105	.3550	•	25.00
AN/SRN-12() TACAN	423	106	.1170	60	20.00
S	437	101	.2157	*	20.00
AN/WRR-2(I RADIO RECEIVING SET	441	108	1961.	S	20.00
BURNERS & REGISTERS	221	109	.4754	0	20.00
NTOS 60 KW 400 HZ MG SET (PU-655/U)	314	110	.1858	S	20.00
IC SWITCHBOARD(FWD & AFT)	431	111	1954		15.00
BOILER SAFETY VALVES	221	112	.3518	1	20.00
AN/SLR-12 COUNTERMEASURES SET	472	112	.0863	7	20.00
SPR-4 400 HZ LINE VOLTAGE REGULATOR	314	114	.2479	2	20.00
AN/UCC-11 > TELEGRAPH TERMINAL	445	114	.0754	7	75.00
TSEC/KW-7	944	116	.3496	•	25.00
AUXILIARY CIRCULATING PUMP	256	1117	.7916	0	25.00
SALINITY CELL	437	117	.6773	2	00.
MK-22 FCS AMPLIFIER CONSOLE	482	117	.2103	6	20.00

The second secon	MAINTENANCE BURDEN FACTOR ORDER	EN FACTOR OR	DER	
		MBF	MDS	NO. OI
EQUIPMENT NOMENCLATURE	SMBS	RANK	FACTOR	CASREPTS
AM-37901 1/SRC-231V) RF AMPLIFIER	144	121	.2858	
AN/UGC-11) UNDERWATER TELEPHONE	442	122	.1282	
ROTARY SOUT BLOWERS	221	123	.1714	0
16MM MOVIE PROJECTOR	434	123	1.0237	0
AN/VRC-46() RADIO SET	134	125	.4654	
PORT FUEL DIL SERVICE PUMP	192	126	.2076	9
AN/SPM-17 RADAR TEST SET	729	127	.3212	
A/C CONDENSER	514	128	.2318	
MK-5 TRAIN PARALLAX CORRECTOR	481	129	.0786	
ANCHOR	581	129	9610.	
AN/SRA-22() ANTENNA COUPLER GROUP	144	131	.3625	•
MK-40 AMPLIFIER	711	132	.3239	
AN/USQ-20(V) GENERAL COMPUTER	412	133	.0406	
ANCHOR WINDLASS	581	133	.2892	
PROPELLER ASSY	245	135	.1244	•
AN/USM-281() CSCILLOSCOPE	164	136	.8241	•
MK-75 DATA CONVERTER	482	137	.1314	1
AN/UPX-23 INTERROGATOR SET	455	138	.1246	14
AN/USQ-36 1 DATA TERMINAL SET	415	139	9061.	
AN/UXH-2() FACSIMILE RECORDER SET	445	140	.0784	•
AN/UPX-17() TRANSPONDER	455	141	.2227	•
CHELSEA CLOCK	421	142	1959.	0
TRANSDUCERS (AN/SQS-23() SONAR SET!	194	143	6100.	
AN/SPS-391 1 30 AIR SEARCH RADAR	453	144	.6291	0
MAIN OVERBOARD BRINE PUMP	531	145	.4371	0
AN/SPA-421) ELECTRONIC SYNCHRONIZER	482	146	.1684	_
2-SPEED VENTILATION FAN	512	1+1	.3183	
0A-3953/SYA-4(V) CONSOLE	111	148	.3976	0
MK-1 AIR SUPPLY UNIT	481	149	.1708	
MFP DISCHARGE RELIEF VALVE	255	150	, 2016	0
MK-46 TORPEDO	750	151	.5178	
MK-152 DIGITAL COMPUTER	482	152	•1106	60
ANYWRC-11) RADIO SET	144	153	.2676	
TSEC/KG-22	446	153	.0872	_
MAIN REDUCTION GEARS	241	155	.4129	
ANYSSO-29() DATA TERMINAL SET	415	156	.3050	
AM-39241 1/URT-23 RF AMPLIFIER	141	156	.0645	
CV-2517() DIGITAL DATA CONVERTER	422	158	.1687	
SONAR TRANSMITTER COOLER	132	159	.1984	

FREQUENCY ()

25 00 25 00

PAGE 4 OF

APPENDIX 8

25.00 25

		MBF	MDS	NO. OF	
EQUIPMENT NOMENCLATURE	SMBS	RANK	FACTOR	CASREPTS	2
CBTV-545() OSCILLOSCOPE	165	160	6414.	0	
SHIPS SERVICE FRESH MATER PUMP	533	791	.3210	0	
	165	163	.4612	0	
MK-10 FCS AMPLIFIER	482	191	.1376	0	
T-827/URT-23 TRANSMITTER	144	165	9080*	1	
AN/USM-1401) OSCILLOSCOPE	164	166	.4344	0	
SFTE AN/SPG-55 RADAR	482	167	.4240	0	
EMERGENCY GAS TURBINE GENERATOR CIRCULATING PUPP	348	891	.0862	0	
MAIN DRAIN EJECTOR	529	169	.2412	0	
TSEC/KY-8 AUTO	944	170	.2294	0	
	421	171	.3476	0	
AN/UPA-241) DECODER SET	455	172	.3129	0	
0	432	173	1902.	0	
MK-44 TORPEDG	150	173	.2997	0	
MK-19 RECORDER	412	175	.0353	4	
	524	176	.2982	0	
	441	171	2910.	1	
CV-1169/SRC-16 ANTENNA COUPLER	441	178	.2081	-	
MK-4 MODO NDE	482	179	.2678	0	
AN/USM-116() MULTIMETER	491	180	.2542	0	
2	165	181	.2481	0	
ER	199	182	.2295	0	
TYPEWAITER	199	183	.2152	0	
AM-4530/ULO-6() RF AMPLIFIER	471	184	.2148	0	
T-1004/SRC-231V) PADIO TRANSMITTER	144	185	.1867	2	

DVERHAUL REQUENCY ()

PAGE S OF S

APPENDIX 8

APPENDIX C

CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST SWBS ORDER

PRECEDING	PACE	TOM	FILLE
RI ANK			

	APPENDIX	U *			PAGE 1 OF 5
CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST	INTENANCE C	RITICAL EQUIP	HENT LIST		
SHIPS	DRK BREAKDO	SHIPS WORK BREAKDOWN STRUCTURE ORDER	ORDER		.1
EQUIPMENT NOMENCLATURE	SWBS	RANK	FACTOR	NO. OF	OVERHAUL FREQUENCY ()
MAIN ACT FRO	321	3	06.90	101	00 001
BURNERS & REGISTERS	221	100	4754		
BOILER SAFETY VALVES	221	112	3518		20-00
ROTARY SOOT BLOWERS	221	123	1714	• 0	75-00
ACC/FWC SYSTEM	221	53	.5385	13	50-00
HP/LP TURBINES	231	50	1.6141	27	75.00
MAIN REDUCTION GEARS	241	155	.4129	-	00.
PROPULSION SHAFT SFAL	243	99	.4635	E	75.00
LINE SHAFT BEARING ASSY	544	02	.3718	6	15.00
PROPELLER ASSY	545	135	.1244	0	15.00
FORCED DRAFT BLOWERS	152	7	2.3452	11	100.00
- (253	74	.2882	2	100.00
MAIN STEAM 6IN (1500 PSI) GATE VALVE	253	64	.6134		100.00
AUXILIARY GLAND CONDENSER	554	99	.4937	2	75.00
PROPULSION GLAND EXHAUSTER	524	091	.2477	-	25.00
AUXILIARY (SSTG) GLAND CONDENSER	524	83	.4220	12	25.00
MAIN FEED PUMP	552	4	3.8002	23	100.00
MAIN CONDENSATE PUMP	255	15	1.6670	01	100.00
MAIN FEED BOCSTER PUMP	255	36	1.9459	0	20.00
AUXILIARY CONDENSATE PUMP	552	55	.5454	2	100.00
DEAERATING FEED TANK	552	104	.4511	-	20.00
MFP DISCHARGE RELIEF VALVE	255	150	• 5016	0	20.00
MAIN CIRCULATING PUMP	256	36	.4623	60	100.00
AUXILIARY CIRCULATING PUMP	556	111	.7916	0	25.00
600 PSI BIMETALLIC STEAM TRAP	258	186	.1306	ю	00.
	197	126	.2076	•	25.00
	261	54	2.5946	32	50.00
FUEL OIL DUPLEX STRAINER	192	120	.2973	5	25.00
MAIN LUBE OIL SERVICE PUMP	292	100	.1739	2	75.00
MAIN LUBE OIL SERVICE STANDBY PUMP	292	94	1.3500	2	15.00
LUBE OIL PURIFIER	597	64	\$606°	10	50.00
RATOR	311	2	2.6782	22	100.00
EMERGENCY SHIPS SERVICE GAS TURBINE GENERATOR	312	18	1.1614	15	75.00
60 KM 400 HZ MG SET	314	92	.4415	5	50.00
NTOS 60 KM 400 HZ MG SET (PU-655/U)	314	110	.1858	5	20.00
SPR-4 400 HZ LINE VOLTAGE REGULATOR	314	114	.2479	2	20.00
30 KM 400 HZ MG SET	314	56	.6450	6	20.00
200 KW 400 HZ MG SET	314	72	.2236	•	75.00
EMERGENCY GAS TURBINE GENERATOR CIRCULATING PUMP	342	168	.0862	0	20.00
AN/SPA-25() RADAR PPI	411	1.5	.6526	\$	15.00

EQUIPMENT NOMENCLATURE	SWBS	RANK	FACTOR	NO. OF	
AN/SPA-74() RADAR INDICATING GROUP	411	50	.6624	12	
7	411	841	.3976	. •	
2	411	38	.8722	m	
CONSOLE	114	*	2.4783	20	
MK-19 RECORDER	412	175	.0353	•	
-25176) DIGITAL DATA CONVERTER	412	158	.1687	•	
CP-789/UVK DIGITAL COMPUTER	412	81	.4380	_	
AN/USQ-20(V) GENERAL COMPUTER	412	133	.0406	•	
CP-642(1/USQ-20(V) DIGITAL COMPUTER	412	19	.8880	23	
CV-2036/USQ-201V) DIGITAL CONVERTER	412	88	.5782	11	
RD-243/USQ-20(V) RECORDER-REPRODUCER	412	0,4	.4892	11	
AN/SSG-29() DATA TERMINAL SET	415	156	.3050	7	
AN/USQ-36() DATA TERMINAL SET	415	139	9061	S	
AL IDADE	421	171	.3476	•	
MK-3 BINDCULARS	421	16	1111.	•	
CHELSEA CLOCK	421	142	.6561	0	
	423	30	1.3481	23	
	423	106	.1170	© !	
AN/UGN-11 PATHOMETER	474	2 :	1916.	7 :	
•	426	=	2.101.2	21	
DEAD RECKONING ANALYZER INDICATOR	426	89	. 7313	20 ~	
- 1	974	75	6460.	* (
-	975	76	. 2003	•	
UNDERWATER LUG TRANSMITTER	074	48	7616.	•	
Caronina Car	164	111	1761.	• •	
u	254		1966.	w (
SUCIND PUMERED TELEPHONE CATS	432	13	1902-		
INTERCOM LUGOSPEAKERS	157	70	2000	0.0	
THE PERSON OF PERSONS ASSESSED TO A PERSON OF THE PERSON O	161	201	1620-1		
THE STEED & DIRECTION INPUSAL IES	164	-	1617	•	
LIMIT CELL	154	- 17	.0113	v 0	
ANY SAC-231 ILVI KAULU SEI		2.0	2000	0 0	
-314CL 1/3KL-23141 ATTENTION	111	171	0070	• •	
ALTERACTOR ANTENNA COLO CO COLO		197	5675	J : 4	
	177	12	2.6921	. 6	
1	179	178	2081		:
•	145	•	3.7997	27	
-	177	60	8755		
			0.77.		

25.00 25

91 93	CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST	RITICAL EQUI	PMENT LIST		
	SHIPS WORK BREAKDOWN STRUCTURE ORDER	WN STRUCTURE	ORDER		
SOURT STATES OF STATES		MBF	MDS	NO. OF	DVERHAUL
EQUIPMENT NOMENCLATURE	SMBS	KANK	PACTOR	CASREPTS	FREQUENCY
AN/URC-91) RADIO SET	144	09	1.8346	9	000
	141	30	2.0731	15	50.00
ANJURO-41 1 DIRECTION FINDER SET	173	23	+106.	15	15.00
	141	09	9109.	23	25.00
AM-39241 1/URT-23 RF AMPLIFIER	144	156	.0645	6	00.
T-827/URT-23 TRANSMITTER	141	165	.0806	1	00.
AN/VRC-46() RADIO SET	1**	125	*4654		25.00
-	13	153	. 2676	m I	00.
ANYWRR-ZI J RADIO RECEIVING SET	155	801	1861.	٠.	20.00
ANYMET-ZE I KAUTO TRANSFILLER	15	76	6107	11	36.00
COST TORR RADIO RECEIVER		35	60619	7,	00.53
ANYONA-SOL MAIENNA COUPLER GROUP	744	111	1907		00.05
I TTY DO INTER	25.4	777	5031	• •	75.00
	597	96	1243		50.00
AN/UXH-21) FACSIMILE RECORDER SET	445	140	.0784	. 0	75.00
١.	5445	1114	.0754	2	15.00
-	955	170	*622*	0	25.00
TSEC/KW-7	944	116	.3496	4 (25.00
	944	153	2780.		00.
SURFACE SEARCH RA	165	33	6646	15	00.00
20 AIR SEARCH RAD	452	•	6775.5	m c	00.0
ANYSPS-39() 30 AIR SEARCH RAUAK	473	14.	1679	0 6	20.05
I DEFINED CET	257	123	1129	0	00.
-	455	63	7399	12	25.00
TRANSPONDER	455	141	.2227	•	00.
IN	455	138	.1246	14	00.
AN/505-231) SONAR SET	195	80	3.8764	26	15.00
TRANSDUCERS (AN/SQS-23() SONAR SET)	461	143	.0079	0	75.00
AN/ULG-6() COUNTERMEASURES SET	145	27	2.0809	30	20.00
AM-4530/ULG-61) RF AMPLIFIER	471	184	.2148	0	00.
/SLR-12 COUNTERMEASURES SET	472	112	.0863	_	20.00
AMPLIFIER GROU	472	18	0666.	0 5	20.00
AN MERCINE SE	7/4	2 6	2143	3	75.00
AN-BAN I SENERAL DE ANIENNA	714	179	1635		100.00
DECAUSE INC. SELECTION OF CO.	475	66	9660	. *	15.00
ME-5 TRAIN PARALLAY CORRECTOR	189	129	.0786	*	50.00

HS CG 16 CLA	CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST SHIPS WORK BREAKDOWN STRUCTURE ORDER	RITICAL EQUIF	ORDER		
15	IPS WORK BREAKDO	INN STRUCTURE	ORDER		
		MBF	MOS	NO. OF	OVERHAUL
EQUIPMENT NOMENCLATURE	SMBS	RANK	FACTOR	CASREPTS	FREQUENCY (
MK-75 DATA CONVERTER	482	137	1314	13	00.
MK-10 FCS AMPLIFIER	482	191	.1376	0	20.00
MK-22 FCS AMPLIFIER CONSOLE	482	111	.2103	•	20.00
(-25 FCS RADAR ANTENNA MOUNT	482	85	9884.		20.00
MK-1 DIRECTOR PEDESTAL	482	105	.3550	•	25.00
MK-29 GUNSIGHT	785	*1	2.1916	14	15.00
HK-24 TOT	482	62	1.1632	0	15.00
MK-4 MODO NOE	482	179	.2678	0	00.
MK-119 COMPUTER	482	84	2.5364	12	25.00
	482	152	.1106	•	00.
AN/SPA-421 I ELECTRONIC SYNCHRONIZER	482	941	.1684	1	20.00
AN/SPG-50() RADAR SET	482	91	1.906.1	13	75.00
AN/SPG-55() RADAR SET	482	1	01+8-++	230	100.00
SFTE AN/SPG-55 RADAR	482	191	.4240	0	00.
MK-53 ATTACK COMSOLE	483	32	1.3169	1	15.00
AN/USM-1164) MULTIMETER	164	081	.2542	0	00.
AN/USM-117() OSCILLOSCOPE	164	163	.4612	0	00.
AN/USM-1401) CSCILLOSCOPE	165	166	.4344	0	00.
AN/USM-281() CSCILLOSCOPE	169	136	.8241	0	000
CBTV-5451) OSCILLOSCOPE	164	091	6414.	0	00.
COVT-1107() SIGNAL GENERATOR	164	181	1842.	0	00.
2-SPEED VENTILATION FAN	512	147	.3183	1	25.00
A/C CONDENSER	514	128	.2318	1	20.00
A/C COMPRESSOR	514	16	1.0094	•	25.00
A/C CHILLED WATER PUMP	514	101	.5356		25.00
FIRE PUMP	521	3	5.7451	55	100.00
A/C PLANT SW CIRC PUMP	524	99	1.1284	2	80.00
	524	176	.2982	0	00.
BILGE & FO TANK STRIPPING PUMP	529	56	.6252	2	15.00
MAIN DRAIN EJECTOR	529	169	.2412	0	25.00
DISTILLER SW FEED PUMP	531	19	.7723	1	15.00
DISTILLING PLANT	531	58	2.0751	80	25.00
MAIN OVERBOARD BRINE PUMP	531	145	.4371	0	25.00
AN/SPG-55 COOLING WATER PUMP	532	56	.9958	12	75.00
SONAR TRANSMITTER COOLER	532	159	.1984	7	25.00
SHIPS SERVICE FRESH WATER PUMP	533	162	.3210	0	25.00
	534	33	. 5825	•	15.00
AUXILIARY STEAM 3IN (1500 PSI) GATE VALVE	534	06	.3322	~ ,	75.00
>	534	96	.3598	0	15.00
1200-600 PSI STEAM REDUCING VALVE	534	80	.4943	2	15.00

	APPENDIX C	o ×			PAGE 5 OF 5
90	CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST	CRITICAL EQUIP	MENT LIST	The second secon	erica - meneromente - con como como como como como como como
	SHIPS WORK BREAKDOWN	DWN STRUCTURE GROER	ORDER		****
		MBF	MDS	NO. OF	DVERHAUL
EQUIPMENT NOMENCLATURE	SMBS	RANK	FACTOR	CASREPTS	FREQUENCY ()
HP AIR DEHYDRATOR	551	92	.1487	2	100.00
HP AIR COMPRESSOR	551	53	1.7765	•	100.00
LP ATR DEHYDRATOR	551	96	.1930	80	50.00
LP AIR COMPRESSOR	551	14	1.1550	-	\$0.00
ANCHOR	185	129	9610.	•	15.00
ANCHOR WINDLASS	581	133	.2892	9	25.00
BOAT HANDLING WINCH	583	98	.1257	7	75.00
PERSONNEL BOAT	583	52	2.8233	1	15.00
UTILITY BOAT	583	54	.8625	2	15.00
HOTOR WHALEBOAT	583	04	.8483	5	15.00
TYPEWRITER	199	183	.2152	0	00.
MK-33 3IN/50 THIN MOUNT	71.1	12	. 8943	13	75.00
MK-2 LOADER	111	50	.7183	•-	100.00
MK-40 AMPLIFIER	1112	132	.3239	6	25.00
MK-10 TERRIER LAUNCHER SYSTEM	721	22	6.0829	23	20.00
ASROC LAUNCHER	121	73	.3910	-	100.00
MK-7 CARRIAGE (ASROC)	721	43	. 7070	•	15.00
MK-7 GUIDE (ASROC)	721	25	.1257	2	15.00
ASROC LOADING CRANE	722	35	.4544	6	100.00
MISSLE TRANSFER CARRIAGE	722	101	.2985	8	20.00
ANJSPM-9 TERRIER TEST SET	129	101	.2222	1	15.00
AN/SPM-17 RADAR TEST SET	129	127	.3212	0	20.00
MK-46 TORPEDO	150	151	.5178	0	00.
MK-44 TORPEDO	150	173	. 2997	0	000
MK-32 TORPEDO TUBE	751	50	1166.	-	100.00
TOUR C-TERRIFR I AUNCHING SYSTEM	199	182	.2295	0	00.

APPENDIX D

CG-16 CLASS MAINTENANCE-CRITICAL EQUIPMENT LIST MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER

PRECEDING PACE NOT FILMED

į	¢	•		
	۱	5		
ļ)		
ı	4	,		
•		200	•	
۰	١	•		
۰	۰	•		

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE DATA SYSTEM (MDS) FACTOR ONDER

	EQUIPMENT NUMENCLATURE	SWBS	PANK	MDS FACTOR	NO. OF CASREPTS	OVERMAUL FREQUENCY (%)
	AN/SPG-551 1 PADAP SET	482		44.8410	230	100.00
	AN/SPS-481 1 3C AIR SEAFCH RADAR	453	2	16.4510	16	50.00
	MAIN BOILERS	221	3	14.8420	106	100.00
	MK-10 TERRIER LAUNCHER SYSTEM	721	,	6.0829	23	50.00
	FIRE PUMP	521	5	5.7451	55	100.00
	AN/SPS-431 1 20 AIR SEARCH KAUAR	452	•	4.4223	43	75.00
	AN/SOS-231 1 SUNAP SET	461	1	3.8764	26	75.00
	MAIN FFED PUMP	555	80	3.8002	23	100.00
	AN/SRC-201 1 PADIC SET	144	0	3.7997	27	15.00
	PERSONNEL BOAT	583	01	2.8233	7	75.00
	H-1051()/URH RADIG RECEIVER	144	==	2.7903	27	25.00
	SHIPS SERVICE TURBINE GENERATOR	311	1.2	2.6782	22	100.00
	FUFL OIL SERVICE PUMP	197	13	2.5946	32	20.00
	MK-119 COMPUTER	482	1,1	2.5364	12	25.00
	AN/SAC-161 1 COMM CENTRAL	441	15	2.4921	61	75.00
	CA-7979/UVA-4 PPI CONSOLE	411	91	2.4783	20	25.00
	FURCED DRAFT BLOWERS	152	17	2.3452	17	100.00
	MK-29 GUNSIGHT	482	18	2.1916	14	75.00
	ANJULO-61) COUNTERMEASURES SET	471	61	2.0809	30	20.00
	DISTILLING PLANT	531	50	2.0751	œ	25.00
	AN/URC-32() PACIC SET	155	21	2.0731	15	20.00
_	MK-19 GYRG COMPASS	456	22	2.7012	12	100.00
_	MAIN FEEL BOOSTER PUMP	555	23	1.9459	0	20.00
_	ANISPG-501 I RADAR SET	482	54	1.9081	13	15.00
	AN/URC-9() RADIO SET	144	52	1.8340	S	00.
	HP AIR COMPRESSOR	551	56	1.7765	S	100.00
	MAIN CONDENSATE PUMP	255	27	1.6670	01	100.00
	HP/LP TURBINES	231	97	1.6141	12	15.00
	AN/MLR-11 I ECM RECEIVING SET	472	59	1.5303	23	15.00
	MAIN LUBE DIL SERVICE STANDBY PUMP	292	30	1.3500	2	15.00
	ANJSRN-61 1 TACAN	453	31	1.3481	23	20.00
	MK-53 ATTACK CONSOLE	483	32	1.3169	7	15.00
	AN/SRC-31() RADIO SET	441	33	1.2704	54	100.00
	MK-24 TDT	482	34	1.1632	0	15.00
	EMERGENCY SHIPS SERVICE GAS TURBINE GENERATOR	312	35	1.1614	15	15.00
	LP AIR COMPRESSOR	155	36	1.1550	-	20.00
	A/C PLANT SW CIRC PUMP	524	37	1.1284	2	20.00
	16MM MOVIE PROJECTOR	434	38	1.0237	0	00.
	A/C COMPRESSOR	514	39	1.0094	4	25.00
	AN/SPG-55 COOLING WATER PUMP	532	04	8566.	12	15.00

PAGE 2 OF 5

-	
121	
7	
•	
•	
-	
•	
-	
•	
•	
NULL TONE	
_	
-	
•	
•	
-	
-	
1	
-	
,	
1	
2	
7	
THE PER	
THE PERSON	
NAME.	
LINANT	
ENAME	
LENANT	
I ENAME	
IN ENANC	
THEMANE	
THEMPILE	
MINIENANC	
THE PRINCE	
THE PRINCE	
HAIN ENAME	
THE INTERNAL	
S MAINIENANT	
S MAINIENANT	
33 MAINIENANL	
ASS MAINTENANCE	
ASS MAINIENANL	
LASS MAINIENANL	
LASS MAINIENANT	
CLASS MAINIENANL	
CLASS MAINIENANL	
CLASS MAINIENANL	
CLASS MAINIENANC	
O CLASS MAINIENANC	
TO CLASS MAINIENANCE	
TO CLASS MAINIENANCE	
TO CLASS MAINIENANL	
TO CLASS MAINIENANT	
O TO CLASS MAINIENANCE	
TO TO CEASS MAINIENANCE	
CO TO CEASS MAINIENANCE	
CO TO CLASS MAINIENAND	
CO TO CEASS MAINIENAND	
CO TO CEASS MAINIENAND	
CO TO CEASS MAINIENAND	

	MAINTENANCE DATA SYSTEM (MDS) FACTOR ORDER	P (MDS) FACTO	IP ORDER		
TABLE SOUTH THE PROPERTY OF TH	3	MOS	405	NO. OF	OVERHAUL EBEDIENCY (1)
	2012	4	TAC ON	CASKERIS	באבקחבשרו ונו
MK-32 TORPEDG TUBE	751	7	1166.	-	100.00
ANISPS-101) SUPFACE SEARCH RADAR	451	45	.9439	15	20.00
LUBE OIL PURIFIFR	597	43	*606*	10	20.00
ANJURD-41) DIRECTION FINDER SET	144	**	, 9074	15	15.00
MK-33 3IN/50 THIN MOUNT	111	45	.8943	13	75.00
CP-642(1/USQ-201V) DIGITAL COMPUTER	412	95	.8880	23	15.00
ANJUYA-41V) DATA DISPLAY GPCUP	411	1.5	.8722	8	100.00
UTILITY BOAT	583	85	.8625	2	75.00
MOTOR WHALEBOAT	583	55	.8483	s	15.00
AN/USM-2811 1 CSCILLOSCOPE	164	\$0	.8241	0	00.
AUXILIARY CIFCULATING PUMP	952	51	9161.	0	25.00
DISTILLER SW FEED PUMP	531	52	.1723	1	15.00
	421	53	1177.	0	20.00
AN/UPX-11() INTERPOGATOR SET	455	54	6661.	12	25.00
DEAD RECKONING AMALYZER INDICATOR	456	55	.7313	90	25.00
MK-7 GUIDE (ASPOC)	721	56	1257.	2	15.00
AN/UGC-251 1 TTY SFT	445	57	.7243	0	20.00
MK-2 LOADER	1117	58	.7183	14	100.00
MK-7 CARPIAGE (ASPOC)	121	59	0707.	٠	15.00
ANJERT-21) PACIO TRANSMITTER	155	09	6101.	11	20.00
SALINITY CELL	437	61	.6773	~	00.
ANISPA-741) FAUAP INDICATING GROUP	411	62	.6624	12	20.00
CHELSEA CLOCK	451	63	1959.	0	00.
NC-2 PLUTTER	456	49	6459.	•	100.00
AN/SP4-25() PADAR PPI	411	69	.6526	•	15.00
30 KM 400 HZ MG SFT	314	99	0549.	o	20.00
ANISPS-391 1 3C AIR SEARCH PADAR	453	19	1679.	0	00.
BILGE & FO TANK STRIPPING PUMP	625	99	.6252	~	15.00
MAIN STEAM BIN (1500 PSI) GATE VALVE	253	69	.6134	e a	100.00
AN/URT-23(1(V) FACIO TRANSMITTER	147	10	9109.	23	25.00
	534	=	.5825	00	15.00
CV-2036/USG-201V) DIGITAL CONVERTER	415	12	.5782	"	00.
ANJSRC-21() RACIC SET	141	73	.5548	1	20.00
AUXILIARY CONDENSATE PUMP	255	14	.5454	~	100.00
DIAL TELEPHONE SWITCHBOARD	432	22	. 5387	~	20.00
ACC/FWC SYSTEM	122	16	. 5385	13	20.00
A/C CHILLED WATER PUMP	514	.;	.5356	~ <	25.00
FK-46 TOKPEDE	061	٤ ;	8/15.	> (00.
INTERCOM LOUGSPEAKERS	433	6.5	2905.	0.	15.00
AUXILIARY GLAND CONDENSER	467	080	.4937	,	15.00

APPENDIX D

GG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST MAINTENANCE DATA SYSTEM (MDS) FACTUR ORDER

EQUIPMENT NUMENCLATURE	SMBS	RANK	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY (%)
AN/UGC-6() TTY PRINTER	5445	81	.4935	0	75.00
RD-243/USQ-201VI RECORDER-REPRODUCER	415	82	.4892	11	75.00
MK-25 FCS RADAR ANTENNA MOUNT	482	83	.4886		50.00
AN/SRC-231 1(V) PACIO SET	144	48	.4772	80	00.
BURNERS & REGISTERS	221	85	.4754	0	50.00
CBTV-5451) OSCILLCSCCPE	165	986	6714.	0	00.
AN/VRC-461 1 RADIO SET	155	87	*4654	1	25.00
PROPULSION SHAFT SFAL	243	88	.4635	R	75.00
MAIN CIRCULATING PUMP	256	68	.4623	œ	100.00
AN/USM-117() OSCILLOSCOPE	165	06	.4612	0	00.
ASROC LOADING CRANE	722	16	**5**	6	100.00
1200-600 PSI STEAM REDUCING VALVE	534	26	.4543	2	75.00
DEAFRATING FEED TANK	255	93	.4511	1	20.00
60 KW 400 HZ MG SET	314	5 6	.4415	5	20.00
CP-789/UYK DIGITAL COMPUTER	412	66	.4380	-	75.00
MAIN OVERBOARD BRINE PUMP	531	96	.4371	0	25.00
AN/USM-140() OSCILLOSCOPE	491	16	.4344	0	00.
SFTE AN/SPG-55 RADAR	482	86	.4240	0	00.
AUXILIARY (SSTG) GLAND CONDENSER	254	66	.4220	12	25.00
MAIN REDUCTION GEARS	142	100	.4129	1	00.
04-3953/SYA-41V1 CONSOLE	411	101	.3976	0	25.00
AN/MLA-3() AMPLIFIER GROUP	472	102	.3950	9	20.00
ASROC LAUNCHER	721	103	.3910	-	100.00
UNDERWATER LOG TRANSMITTER	456	104	.3752	4	20.00
	544	105	.3718	3	15.00
ANJSRA-22() ANTENNA COUPLER GROUP	144	106	.3625	,	00.
600-150 PSI STEAM REDUCING VALVE	534	101	.3598	0	15.00
MK-1 DIRECTOR PEDESTAL	482	108	.3550	•	25.00
T-MK-6 FANFARE WINCH	473	109	.3521	2	100.00
BOILER SAFETY VALVES	221	011	.3518	-	20.00
15EC/KM-7	446	111	.3496	•	25.00
	421	112	.3476	0	00.
AUXILIARY STEAM 3IN (1500 PST) GATE VALVE	534	113	.3322	1	15.00
MK-40 AMPLIFIER	711	114	.3239	3	25.00
ANSPM-17 RADAR TEST SET	729	115	.3212	0	20.00
SHIPS SERVICE FRESH MATER PUMP	533	116	.3210	0	25.00
AN/UGN-1() FATHOMETER	454	117	.3197	2	100.00
2-SPEED VENTILATION FAN	215	118	.3183		25.00
AN/UPA-24() DECODER SET	455	119	.3129	0 '	00.
AN/SSQ-29() DATA TERMINAL SET	415	120	. 3050	7	00.

	CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST	RITICAL EQUI	PMENT LIST		
,	MAINTENANCE DATA SYSTE	SYSTEM (MDS) FACTOR ORDER	JR ORDER		
EQUIPMENT NOMENCLATURE	SHRS	RANK	MDS	NO. OF CASREPTS	OVERHAUL FREQUENCY (%)
MK-44 TORPEDO	150	121	.2997	0	00.
MISSLE TRANSFER CARRIAGE	722	122	.2985	9	50.00
REFRIGERATION SW CIRC PUMP	524	123	.2982	0	00.
FUEL DIL DUPLEX STRAINER	192	124	.2973	v	25.00
ANCHOR WINDLASS	581	125	.2892	3	25.00
MFP ROOT STEAM VALVES	253	126	.2882	2	100.00
AM-37901 1/5RC-23(V) RF AMPLIFIER	144	127	.2858	σ	00.
MK-4 MODO NDE	482	128	.2678	0	00.
AN/WRC-11 1 RADIO SET	144	129	.2676	3	00.
AN/USM-116() MULTIMETER	165	130	.2542	0	00.
CBVT-1107() SIGNAL GENERATOR	165	131	.2481	0	00.
SPR-4 400 HZ LINE VOLTAGE REGULATOR	314	132	.2479	2	20.00
PROPULSION GLAND EXHAUSTER	254	133	.2477	7	25.00
MAIN DRAIN EJECTUR	529	134	.2412	0	25.00
A/C CONDENSER	514	135	.2318	1	20.00
TOOLS-TERRIER LAUNCHING SYSTEM	662	136	.2295	0	000
TSEC/KY-8 AUTO	977	137	*522*	0	25.00
200 KM 400 HZ MG SET	314	138	.2236	9	75.00
AN/UPX-17() TRANSPONDER	455	139	.2227	•	00.
AN/SPM-9 TERRIER TEST SET	129	140	.2222	-	75.00
WIND SPEED & DIRECTION TRANSMITTER	437	141	.2157	4	20.00
	661	142	.2152	0	00.
AM-4530/ULQ-6() PF AMPLIFIER	11.5	143	.2148	0	00.
AS-899(1/SLH OF ANTENNA	472	751	.2143	5	75.00
MK-22 FCS AMPLIFIER CONSULE	482	145	.2103	m·	20.00
CV-1169/SRC-16 ANTENNA COUPLER	1 77	951	1807.	•	00.
PURI FUEL CIL SENVICE PURP	197	51	9707	0 0	00.62
CONCERNATE LUC RUCHETER	974	0.71	2003	0 0	00.30
	365	150	2016		000
COMA TOAT CHITTED COULD	523	151	2801	0 0	25.00
ANGES OF PARTS PECETATION OF THE PROPERTY OF T	767	153	1961	u u	00.03
	144	152	1861	n a	00.00
TO CHITCHBOADDIEND C ARTI	431	757	1924		75.00
	164	155	1904	4 6	25.00
- 3	671	154	2001		00
I-LOUST TO UT WALLE IN THE THE	716	120	0001	V U	000
TO LOS OF THE SOUTH AND THE SELL (PU-055/U)	+16	101	1730		200
SOTTEN COST BLOWERS	787	150	1717	N C	25.00
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	177	651	400	, ,	
The last sorter ones		201	2011.		

APPENCIX D

PAGE 5 OF 5

CG 16 CLASS MAINTENANCE CRITICAL EQUIPMENT LIST

MAINTENANCE DATA SYSTEM (MUS) FACTOR ORDER

EQUIPMENT NOMENCLATURE	SMBS	MDS	MDS FACTOR	NO. OF CASREPTS	OVERHAUL FREQUENCY (%
CV-25171) DIGITAL DATA CONVERTER	412	191	.1687	9	00.
AN/SPA-421) ELECTPUNIC SYNCHRONIZER	482	162	.1684	1	20.00
HP AIR DEHYDRATOR	551	163	.1487	2	100.00
MK-10 FCS AMPLIFIER	482	164	.1376	0	20.00
MK-75 DATA CONVEPTER	482	165	.1314	13	00.
TEAM	258	166	.1306	0	00.
AN/UGC-1() UNDERNATER TELEPHONE	442	167	.1282	1	20.00
BOAT HANDLING MINCH	583	168	.1257	7	15.00
AN/UPX-23 INTERPOGATOR SET	455	691	.1240	14	00.
PROPELLER ASSY	245	170	.1244	0	75.00
AN/SKN-12() TACAN	423	171	.1170	60	50.00
MK-152 DIGITAL COMPUTER	482	172	9011.	80	00.
CEGAUSSING SWITCHBOARD	415	173	9660.	4	15.00
1SFC/KG-22	944	174	.0872	83	00.
AN/SER-12 COUNTERMEASURES SET	472	175	.0863	7	20.00
RATOR	342	176	.0862	0	20.00
	441	177	• 080 •	7	00.
MK-5 TRAIN PARALLAX CORPECTOR	481	178	.0786	7	20.00
AN/UXH-21 1 FACSIMILE RECORDER SET	445	179	.0784	0	15.00
AN/UCC-11) TELEGRAPH TERMINAL	445	180	.0754	2	15.00
AM-3924(1/URT-23 RF AMPLIFIER	441	181	• 0645	6	00.
AN/USQ-201VI GENERAL COMPUTER	412	182	•0400	4	20.00
MK-19 RECORDER	415	183	.0353	4	00.
	581	184	9610*	-	15.00
ANJURA-381 I ANTENNA COUPLER GROUP	441	185	.0162	4	00.
TRANSDUCERS (AN/SCS-231) SONAR SET)	195	186	.0079	0	15.00
	A CCNVERT S SYNCHRO TELEPHON SET SET SET MPLIFIER OMPUTER (1) SONAR	THE RESTRICT OF THE SET SET	SWBS SWBS 1012 ER 412 482 482 482 482 482 482 482	SET SWBS FAUS FAUS FAUS FAUS FAUS FAUS FAUS FAU	FER FACTOR FALS FALS FALS FALS FALS FALS FALS FALS

UNCLASSIFIED

** 34

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION	PAGE	READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. COVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
1646-05-9-1595 ^V		
4. TITLE (and Subtitue) DEVELOPMENT OF A CG-16 CLAS -CRITICAL EQUIPMENT LIST	S MAINTENANCE	TYPE OF REPORT & PERIOD COVERED PERFORMING ORG. REPORT NUMBER TOTAL OF OR JEONE
7. AUTHOR(s)		1646-05-9-1595 8. CONTRACT OR GRANT NUMBER(s)
S.M. Halupa		N00024-76-C-4319V
9. PERFORMING ORGANIZATION NAME AND ADDRESS ARINC Research Corpy 2551 Riva Road Annapolis, Maryland 21401		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS DIRECTOR, CRUISER DESTROYER		12. REPORT DATE March 1977
SHIP LOGISTIC DIVISION NAVAL SEA SYSTEMS COMMAND		13. NUMBER OF PAGES 26
14. MONITORING AGENCY NAME & ADDRESS(II different		15. SECURITY CLASS. (of this report)
DIRECT O R, CRUISER DESTRO Y ER SHIP LOGISTIC DIVISION		UNCLASSIFIED
NAVAL SEA SYSTEMS COMMAND WASHINGTON, D.C. IG. DISTRIBUTION STATEMENT (of this Report)		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
17. DISTRIBUTION STATEMENT (of the obstract entered in	in Block 20, Il dilferent fro.	m Report)
18. SUPPLEMENTARY NOTES		
16. SUPPLEMENTANT NOTES		
19. KEY WORDS (Continue on reverse side if necessary and	d identify by block number)	
20. ABSTRACT (Continue on reverse side if necessery and	Identify by block number)	